AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A group I-VII semiconductor single crystal thin film formed on a substrate made from ionic single crystals,

the group I-VII semiconductor single crystal thin film being formed on a buffer layer while an electron beam is irradiated on the group I-VII semiconductor single crystal thin film, the buffer layer being for alleviating distortion caused due to a difference in lattice constant between the substrate and the group I-VII semiconductor single crystal thin film, and

the group I-VII semiconductor single crystal thin film being a thin film of single composition and being a combination of a layer formed while irradiating the electron beam thereon and a layer formed while not irradiating the electron beam thereon;

wherein an acceleration voltage HV of the electron beam is $0(kV) < HV \leq 30$ (kV), and the group I-VII semiconductor single crystal thin film is of ~~high~~ uniform planarity and crystallinity, and has a roughness in the order of 2 nm .

2. (Cancelled)

3. (Cancelled)

4. (Previously Presented) The group I-VII semiconductor single crystal thin film as set forth in Claim1, having a film thickness that allows an internal electric field to be resonance-increased.

5. (Previously Presented) The group I-VII semiconductor single crystal thin film as set forth in Claim 1, wherein:

a region formed while irradiating an electron beam thereon and a region formed while not irradiating the electron beam thereon are located different places when viewing the substrate in a direction vertical to its surface.

6. (Previously Presented) The group I-VII semiconductor single crystal thin film as set forth in Claim 1 being a CuCl thin film.

7. (Previously Presented) The group I-VII semiconductor single crystal thin film as set forth in Claim 1 being a metal halide semiconductor thin film.

8. (Currently Amended) A process for producing a group I-VII semiconductor single crystal thin film on a substrate made from ionic single crystals, comprising:

forming a buffer layer on the substrate, the buffer layer being for alleviating distortion caused due to a difference in lattice constant between the substrate and the group I-VII semiconductor single crystal thin film; and

forming, on the buffer layer, the group I-VII semiconductor single crystal thin film of single composition, the group I-VII semiconductor single crystal thin film being a combination of a layer formed while irradiating the electron beam thereon and a layer formed while not irradiating the electron beam thereon;

wherein an acceleration voltage HV of the electron beam is $0(kV) < HV \leq 30$ (kV), and the group I-VII semiconductor single crystal thin film is of ~~high~~ uniform planarity and crystallinity, and has a roughness in the order of 2 nm .

9. (Cancelled)

10. (Original) The process as set forth in Claim 8, comprising:

forming a layer of the group I-VII semiconductor single crystal thin film while irradiating an electron beam thereon; and

forming the rest of the group I-VII semiconductor single crystal thin film while not irradiating the electron beam thereon.

11. (Previously Presented) The process as set forth in Claim 8, wherein:

the layer formed while irradiating the electron beam thereon and the layer formed while not irradiating the electron beam thereon have film thicknesses that are decided in consideration of a film thickness of the group I-VII semiconductor single crystal thin film, which is the combination of the layer formed while irradiating the electron beam thereon and the layer formed while not irradiating the electron beam thereon.

12. (Previously Presented) The process as set forth in Claim 8, wherein:

the film thickness of the group I-VII semiconductor single crystal thin film is a film thickness with which an internal electric field is resonance-increased.

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Currently Amended) A group I-VII semiconductor single crystal thin film formed on a substrate made from ionic single crystals,

the group I-VII semiconductor single crystal thin film being formed on a buffer layer while an electron beam is irradiated on the group I-VII semiconductor single crystal thin film, the buffer layer being for alleviating distortion caused due to a difference in lattice constant between the substrate and the group I-VII semiconductor single crystal thin film, and

the group I-VII semiconductor single crystal thin film being a thin film of single composition and being a combination of a layer formed while irradiating the electron beam thereon and a layer formed while not irradiating the electron beam thereon;

wherein a filament current FI of the electron beam is $0\ (A) < F1 \leq 5\ (A)$, and the group I-VII semiconductor single crystal thin film is of ~~high~~ uniform planarity and crystallinity, and has a roughness in the order of 2 nm .

17. (Currently Amended) A group I-VII semiconductor single crystal thin film formed on a substrate made from ionic single crystals,

the group I-VII semiconductor single crystal thin film being formed on a buffer layer while an electron beam is irradiated on the group I-VII semiconductor single crystal thin

film, the buffer layer being for alleviating distortion caused due to a difference in lattice constant between the substrate and the group I-VII semiconductor single crystal thin film, and

the group I-VII semiconductor single crystal thin film being a thin film of single composition and being a combination of a layer formed while irradiating the electron beam thereon and a layer formed while not irradiating the electron beam thereon;

wherein an irradiation current HI of the electron beam is $0(\mu A) < HI \leq 150(\mu A)$, and the group I-VII semiconductor single crystal thin film is of ~~high~~ uniform planarity and crystallinity, and has a roughness in the order of 2 nm .

18. (Currently Amended) A process for producing a group I-VII semiconductor single crystal thin film on a substrate made from ionic single crystals, comprising:

forming a buffer layer on the substrate, the buffer layer being for alleviating distortion caused due to a difference in lattice constant between the substrate and the group I-VII semiconductor single crystal thin film; and

forming, on the buffer layer, the group I-VII semiconductor single crystal thin film of single composition, the group I-VII semiconductor single crystal thin film being a combination of a layer formed while irradiating the electron beam thereon and a layer formed while not irradiating the electron beam thereon;

wherein a filament current FI of the electron beam is $0\ (A) < F1 \leq 5\ (A)$, and the group I-VII semiconductor single crystal thin film is of ~~high~~ uniform planarity and crystallinity, and has a roughness in the order of 2 nm .

19. (Currently Amended) A process for producing a group I-VII semiconductor single crystal thin film on a substrate made from ionic single crystals, comprising:

forming a buffer layer on the substrate, the buffer layer being for alleviating distortion caused due to a difference in lattice constant between the substrate and the group I-VII semiconductor single crystal thin film; and

forming, on the buffer layer, the group I-VII semiconductor single crystal thin film of single composition, the group I-VII semiconductor single crystal thin film being a combination of a layer formed while irradiating the electron beam thereon and a layer formed while not irradiating the electron beam thereon;

wherein an irradiation current HI of the electron beam is $0(\mu A) < HI \leq 150(\mu A)$, and the group I-VII semiconductor single crystal thin film is of ~~high~~ uniform planarity and crystallinity, and has a roughness in the order of 2 nm .